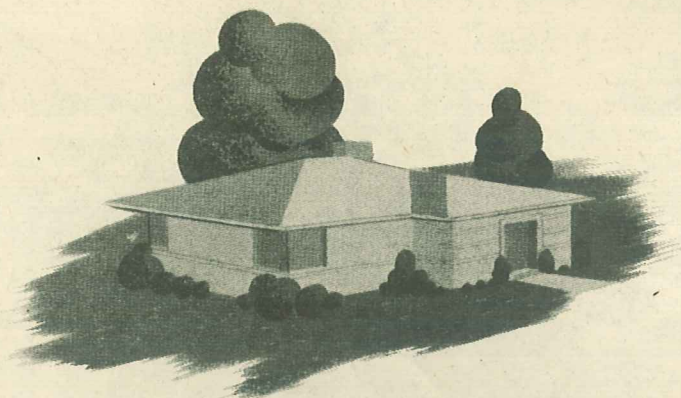




Suggested Designs

FOR SMALL
**FIRESAFE CONCRETE
HOMES**



SUGGESTED DESIGNS FOR SMALL FIRESAFE CONCRETE HOMES

AUTHORITIES AGREE there is, and will be for many years, a shortage of decent, livable homes. Greatest need is not for large, luxury dwellings, but for small, attractive, sensibly planned, low cost houses. To keep them low in cost and make them outlive the long term loans by which they are financed, they should be firesafe and so durable in construction that maintenance expense is negligible. The concrete house is the answer to this small home problem.

Concrete homes can be built anywhere, for the materials needed to build firesafety and low cost into homes are available in every community. Furthermore, local concrete masonry manufacturers and concrete contractors can recommend experienced builders for your home.

That low cost homes can be distinctive in architectural treatment is shown in the following suggested house designs. Local architects anywhere can adapt these designs to your specific needs and tastes, and prepare working drawings and specifications.

Typical construction details and suggested specifications at the bottom of pages throughout this booklet are a guide to good practice in building firesafe concrete homes. Cubage estimates for each design may be used in obtaining preliminary cost estimates from your local builder who is experienced in concrete construction. Within this booklet is the basic idea for the best small house you could want—in low cost, firesafe concrete.

PORTLAND CEMENT ASSOCIATION

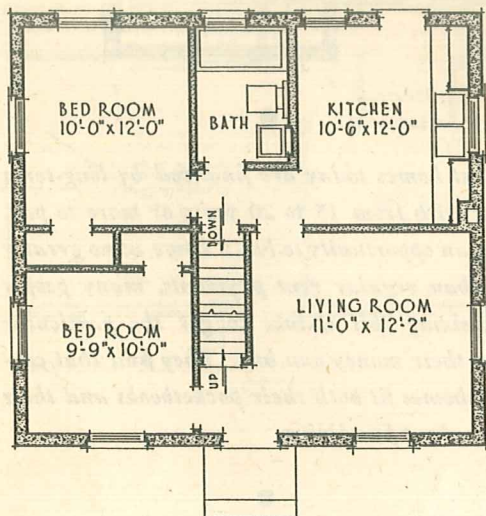
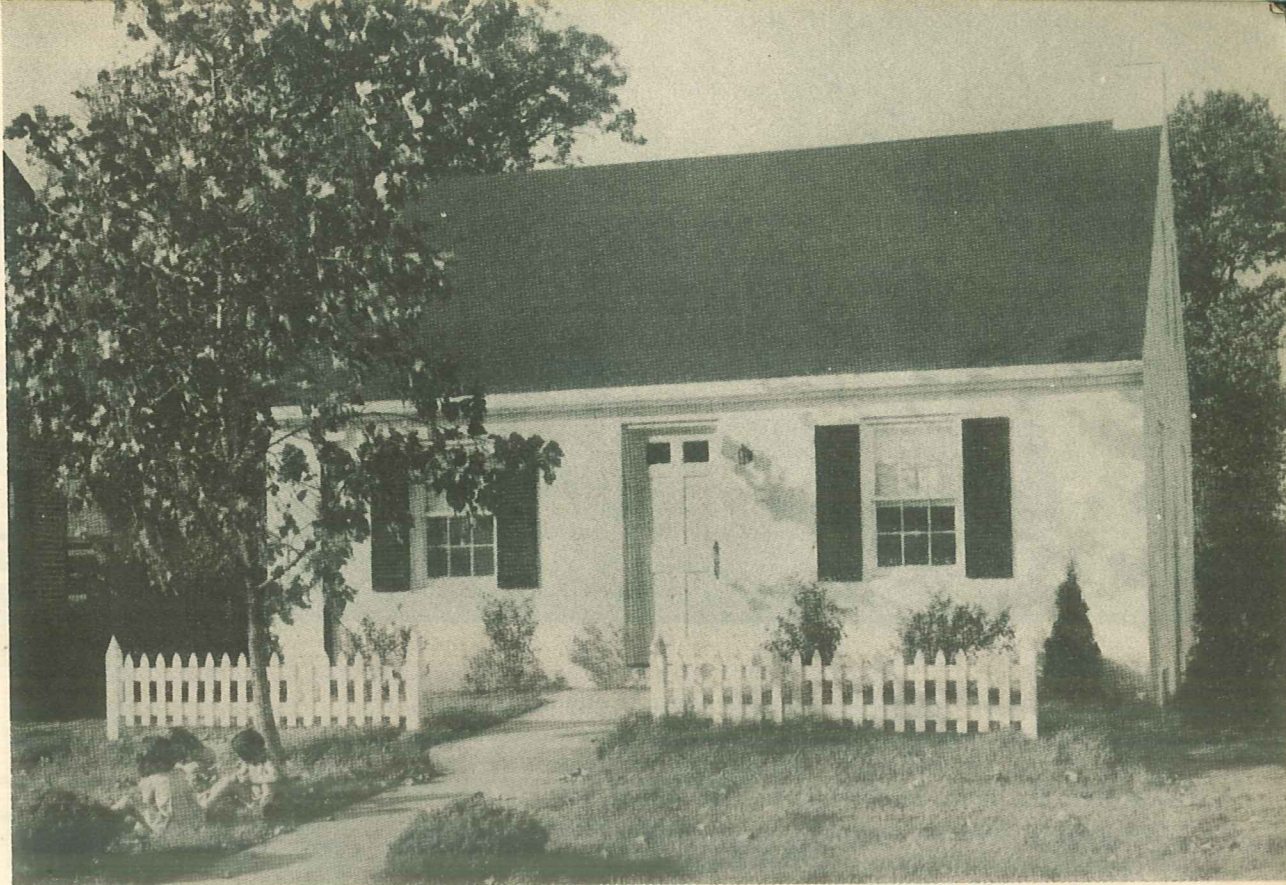
The activities of the Portland Cement Association, a national organization, are limited to scientific research, the development of new or improved products and methods, technical service, promotion and educational effort (including safety work), and are primarily designed to improve and extend the uses of portland cement and concrete.

The manifold program of the Association and its varied services to cement users are made possible by the financial support of over 60 member companies in the United States and Canada, engaged in the manufacture and sale of a very large proportion of all portland cement used in these two countries. A current list of member companies will be furnished on request.

CUBAGE:

House 8,750 cu.ft.

Basement . . . 4,960 cu.ft.



A simple New England cottage design presents lasting charm. Close clipped gables, recessed doorway and shuttered windows blend well with the sturdy concrete masonry walls.

The interior arrangement conserves space in this small home. Four rooms on the first floor provide convenient and adequate living area for a small family. In the interest of economy, finishing of the second floor rooms may be left for a later day. Meanwhile the attic will provide useful storage space.

To assure low maintenance and firesafety, both first and second floors are concrete. Aside from low first cost, the continual economy of concrete homes is of major importance to a well-planned budget. Such homes require practically no replacement of worn or deteriorated members over the years. Non-sagging floors and walls protect decoration and reduce repair bills.

Page 3

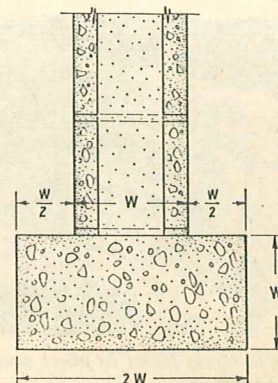
CONSTRUCTION DETAIL AND SPECIFICATION SUGGESTIONS

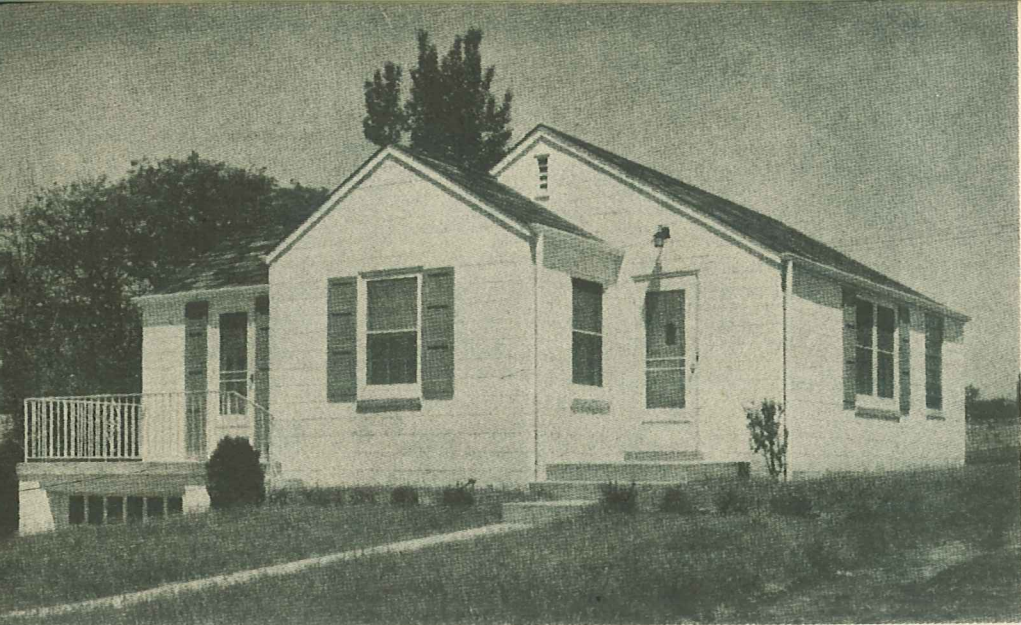
FOOTINGS

General practice is to build footings having a depth equal to the thickness of foundation walls and a width twice that of the walls. Thus, for an 8-in. thick foundation or basement wall the footings are commonly made 8 in. deep and 16 in. wide; for a 10-in. thick foundation wall, 10 in. thick and 20 in. wide.

Concrete for footings should be well mixed and in proportion of 1 volume of portland cement to $2\frac{1}{2}$ volumes of sand and $3\frac{1}{2}$ volumes of gravel or crushed stone ($1:2\frac{1}{2}:3\frac{1}{2}$ mix). Not more than 6 gal. of water per sack of cement should be used.

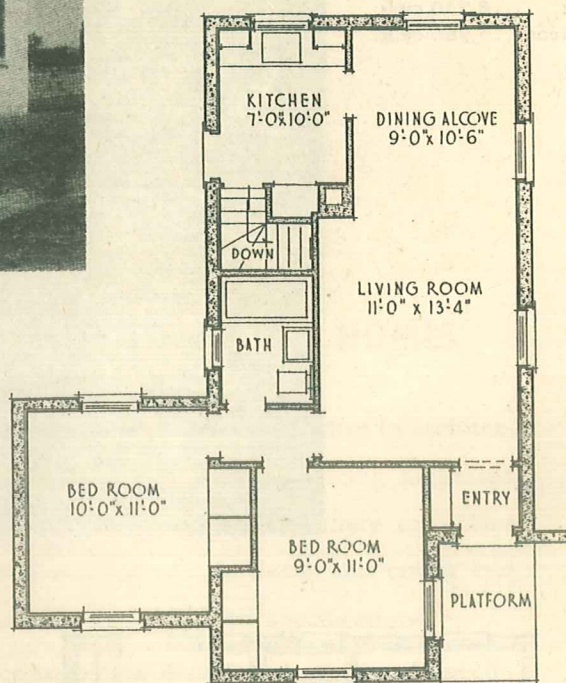
Typical design for cast-in-place concrete footing supporting concrete masonry bearing wall.



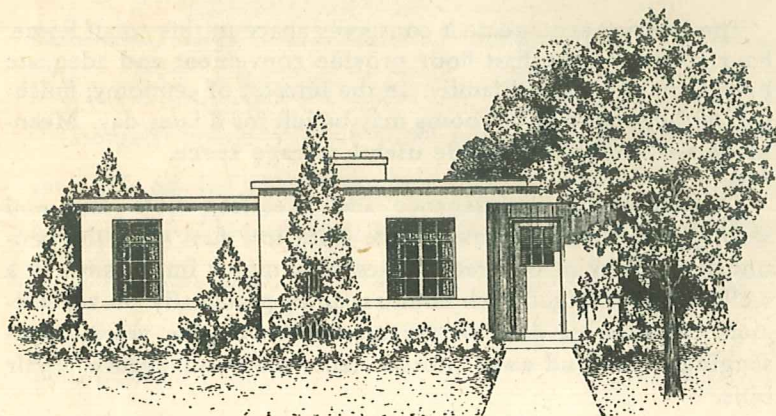


CUBAGE:
House.....9,500 cu.ft.
Basement...6,325 cu.ft.

Much of the fine appearance of this house is due to its broad, low lines. The varying heights of gables and the forward projection of the two bedrooms are effective on either a small or large lot. For those preferring modern design the same floor plan may be adapted as shown in the sketch below. Low flat lines of the roof, chimney and cantilever porch canopy are distinctive features in pleasing proportion. A finish of white portland cement paint or stucco on the walls offers an attractive contrast to colored shutters and exterior trim. A basement garage and a porch deck for one of the bedrooms as in the home above offers a practical variation to the floor plan shown. Such a feature is most adaptable to lots with a sloping contour.



Most homes today are financed by long-term loans with from 15 to 20 years or more to pay. With an opportunity to buy a home at no greater cost than regular rent payments, many people are seizing this chance to get the particular home their money can buy. They find that concrete homes fit both their pocketbooks and their ideas about fine living.



CONSTRUCTION DETAIL AND

BASEMENT WALLS

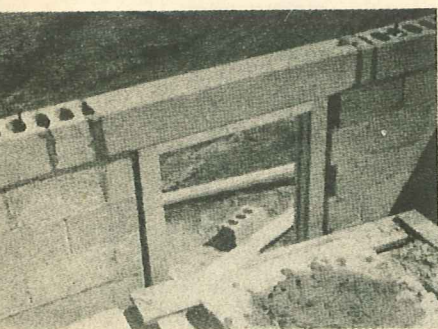
Concrete masonry walls 8 in. thick are waterproofed with two coats of portland cement plaster on exterior; reinforced concrete lintels are placed over door and window openings.

Concrete masonry for basement walls should be laid in a mortar proportioned 1 volume of portland cement to 3 volumes of damp, loose mortar sand (1:3 mix). A plasticizing agent may be added in limited amount to increase

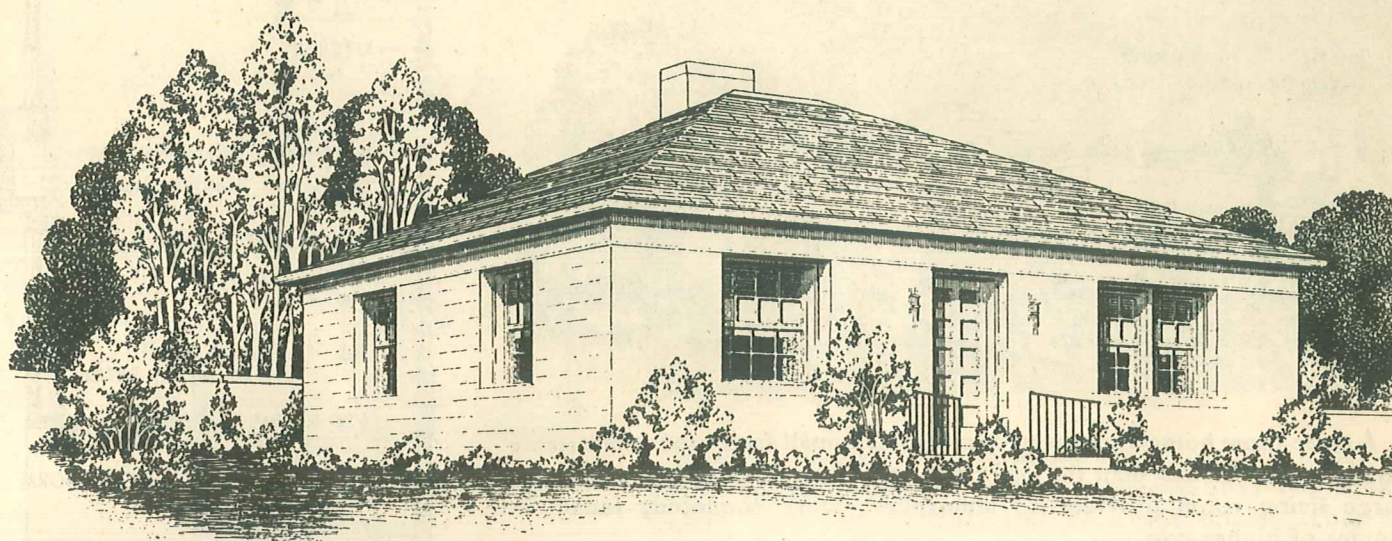
workability of the mortar. Mortar joints should not be more than $\frac{3}{8}$ in. thick. Joints shall be tooled tight and cut flush with face of wall.

Backfilling of foundation or basement walls should not be performed until first floor is in place.

Where basement is omitted an insulated concrete slab may be placed on fill. Foundation walls should be carried down below the frost line.



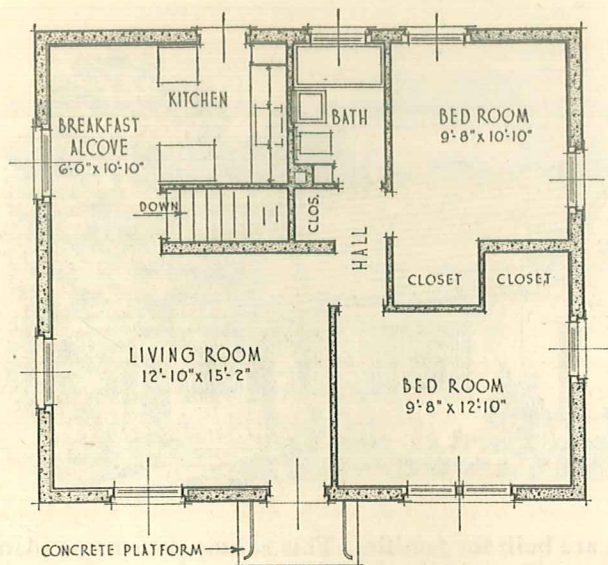
Precast concrete lintel in place over window frame.



CUBAGE:

House 11,540 cu.ft.

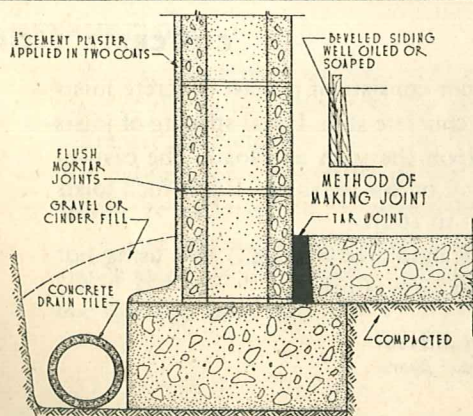
Basement . . 7,700 cu.ft.



The low walls, hip roof, distinctive entrance porch, and well proportioned recessed windows enhance the beauty of this little home. Inside, a compact floor plan provides exceptional living comfort in a spacious living room, easily accessible bedrooms and bath, and a dining alcove which forms a part of the kitchen.

Basement size is a matter for owner's preference. It may be full, offering opportunities for storage space or recreation and play room, or it may be a half basement large enough to house the heating plant and laundry. In any event concrete foundations, basement floor and first floor provide structural support and protection against termites and fires.

SPECIFICATION SUGGESTIONS



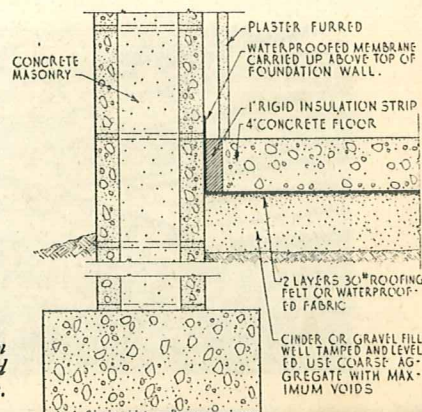
BASEMENT FLOORS

A fill of earth, cinders, gravel or crushed stone should be wetted and compacted into excavations below subgrade or grade level as the case may be.

Concrete for floors should be well mixed and in proportion of 1 volume of portland cement to $2\frac{1}{4}$ volumes of sand and 3 volumes of gravel or crushed stone ($1:2\frac{1}{4}:3$ mix). Not more than 6 gal. of water should be used per sack of cement.

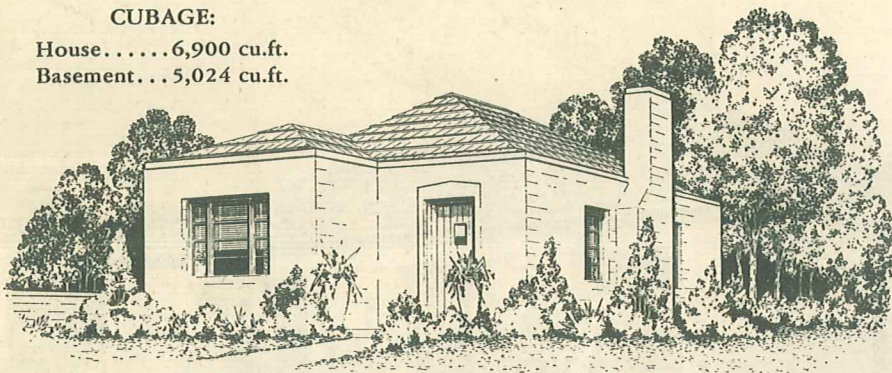
(Left) Suggested construction of exterior basement wall for wet soil conditions.

(Right) Suggested construction of concrete floor on fill and method of providing insulation.

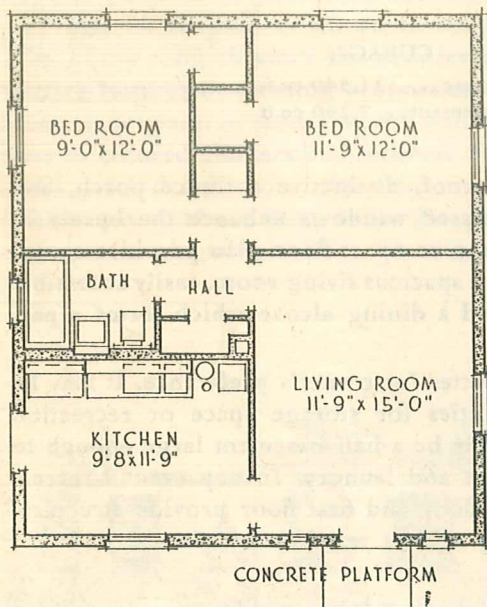
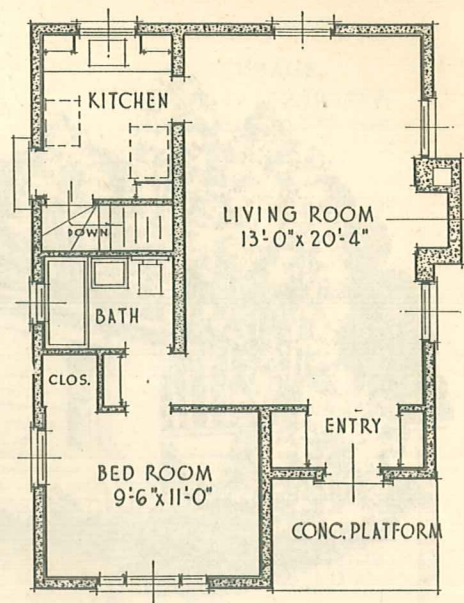


CUBAGE:

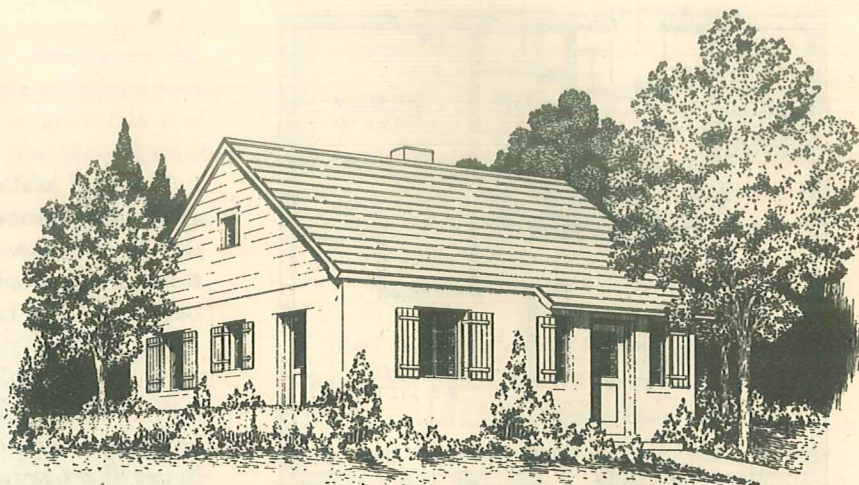
House.....6,900 cu.ft.
Basement...5,024 cu.ft.



A three-room home often meets demands of a small family for comfortable living space. In this plan the bedroom and kitchen are ample in size. A large living room provides an atmosphere more commonly found in homes of higher cost.



Cubage.....9,800 cu.ft.



Even small homes are built for families. This roomy, four-room plan provides for two large bedrooms completely detached from living quarters, and very close to the bath. There is closet space to delight any housewife, and a kitchen large enough to swing a cat by the tail.

CONSTRUCTION DETAIL AND

CONCRETE FLOOR

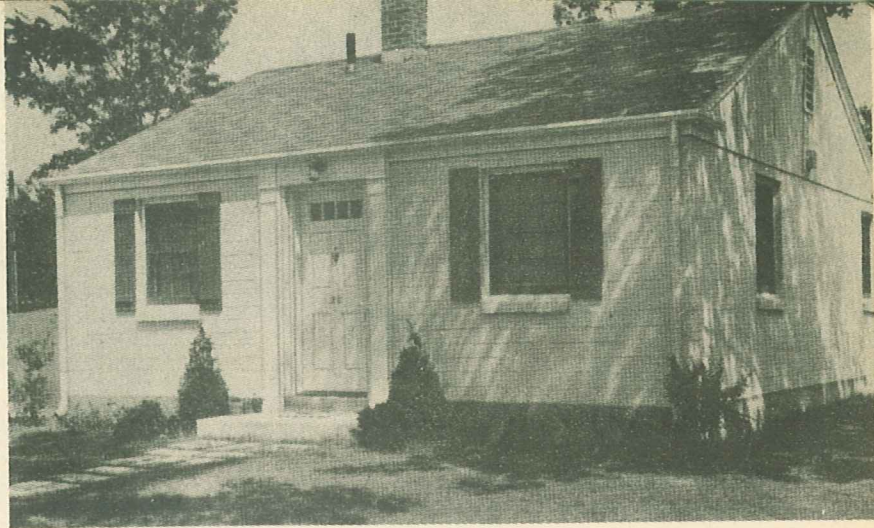
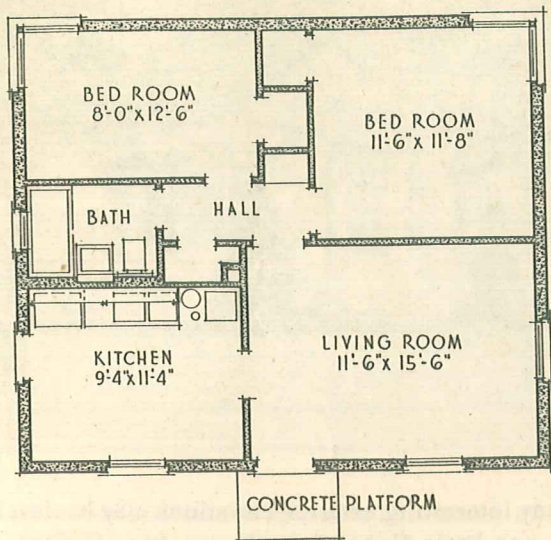


A precast concrete joist floor consists of precast concrete joists covered with a cast-in-place concrete slab. Usual spacing of joists is 27 to 33 in., depending upon the span and load. The cast-in-place concrete slab is usually 2 or 2½ in. thick. Eight-inch joists are usually used for spans up to 16 ft.

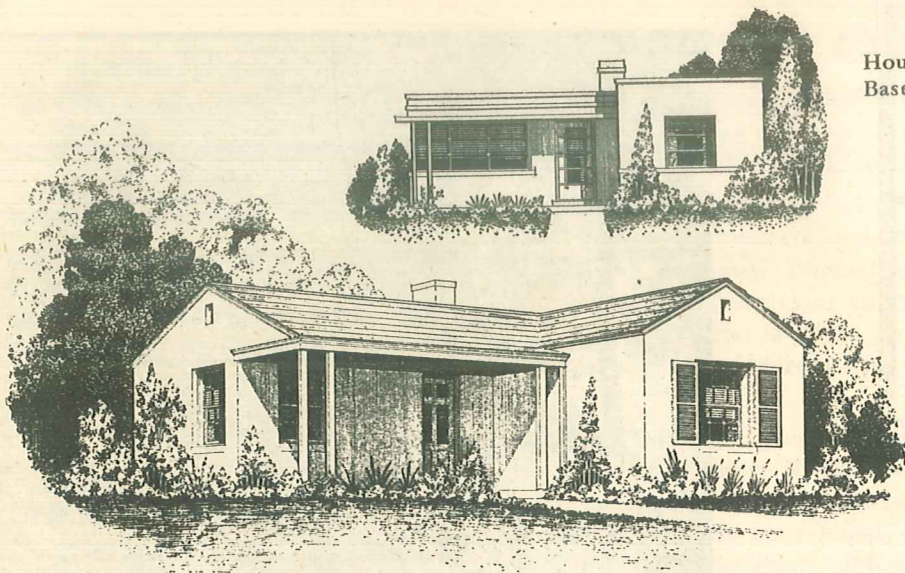
Concrete for the floor slab should be a 1:2¼:3 mix using not more than 6 gal. of water per sack of cement.

(Left) Precast concrete floor joists and concrete walls help make creak-proof floors.

Cubage.....9,800 cu.ft.



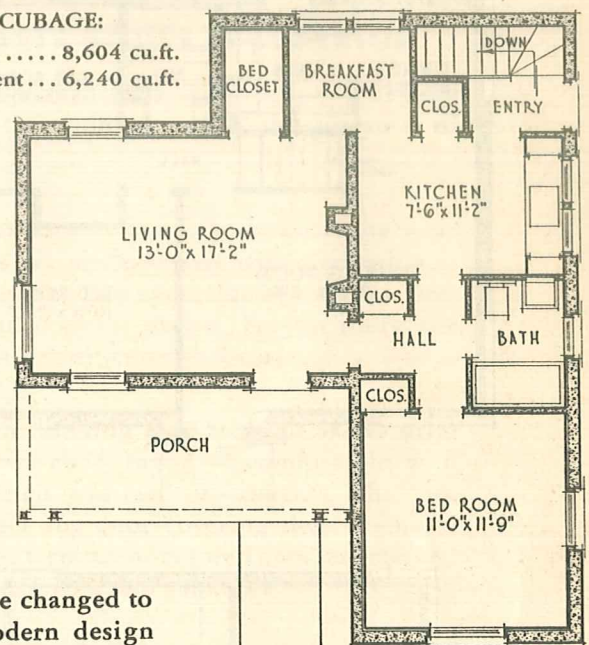
People who know that low maintenance, low fire insurance and protected investment are first requirements for small homes, flock to see beautiful concrete houses. They are surprised—and pleased—at the spacious, comfortable interior.



A ranch type style is as adaptable to a small home as a more pretentious house. For added enjoyment of garden or front lawn, a wide porch opens from the living

room. The gable roof may be changed to a flat type, resulting in a modern design with the same floor plan. Whatever the style, concrete masonry is adaptable.

CUBAGE:
House.....8,604 cu.ft.
Basement... 6,240 cu.ft.



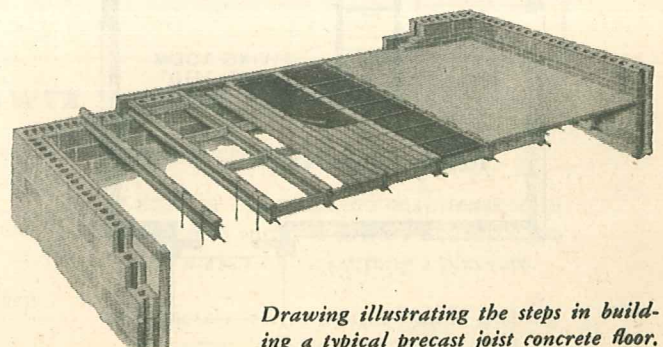
Page 7

SPECIFICATION SUGGESTIONS

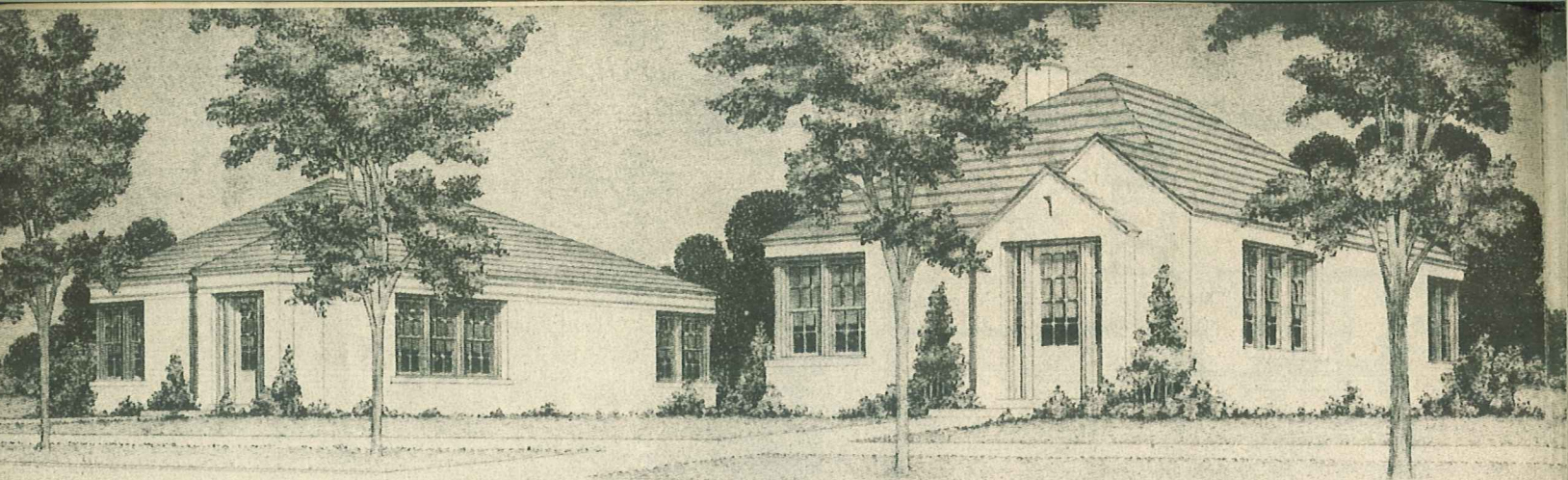
CONSTRUCTION

Precast concrete slabs, either plain or colored, may be used in place of the cast-in-place concrete slab.

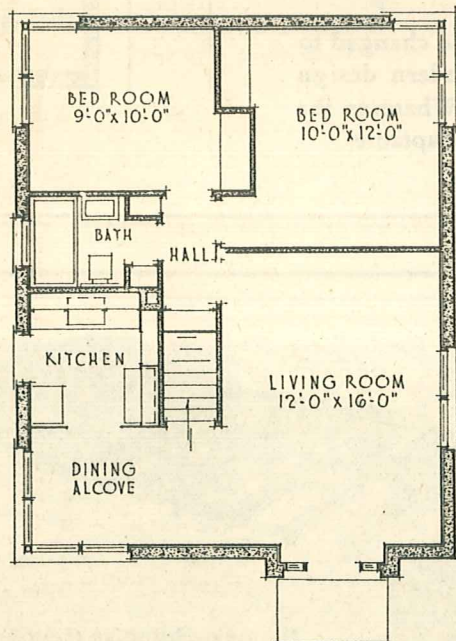
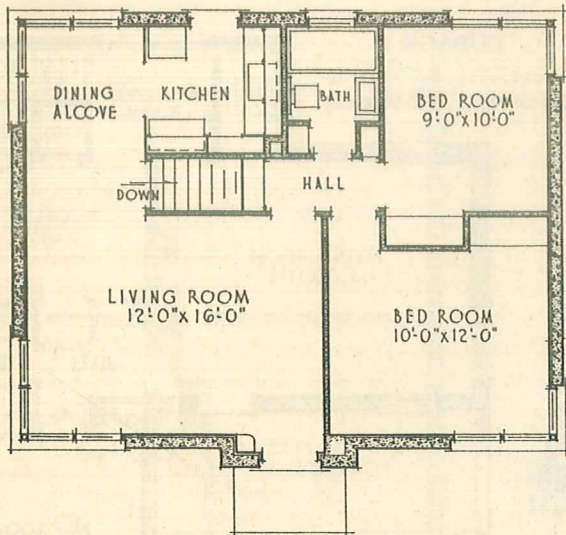
Precast concrete joists may be left exposed on the underside and painted, or a suspended plastered ceiling may be used. An attractive variation in exposed joist treatment is to double the joists and increase the spacing. Where this is done the concrete slab is made 2½ in. thick for spacings up to 48 in., and 3 in. thick for spacings from 48 in. up to 60 in.



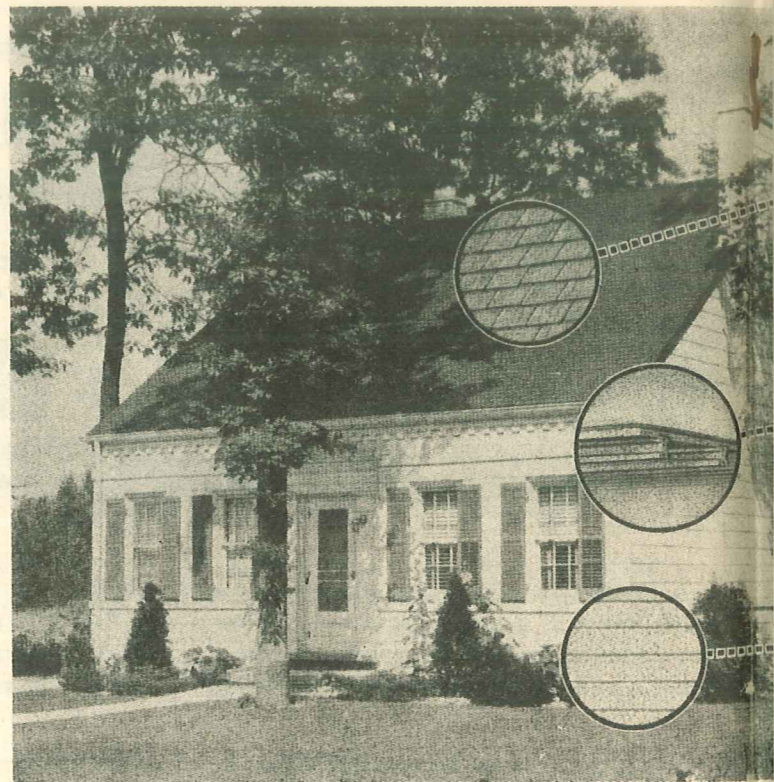
Drawing illustrating the steps in building a typical precast joist concrete floor.



Two identical floor plans adapted for change in front elevation.

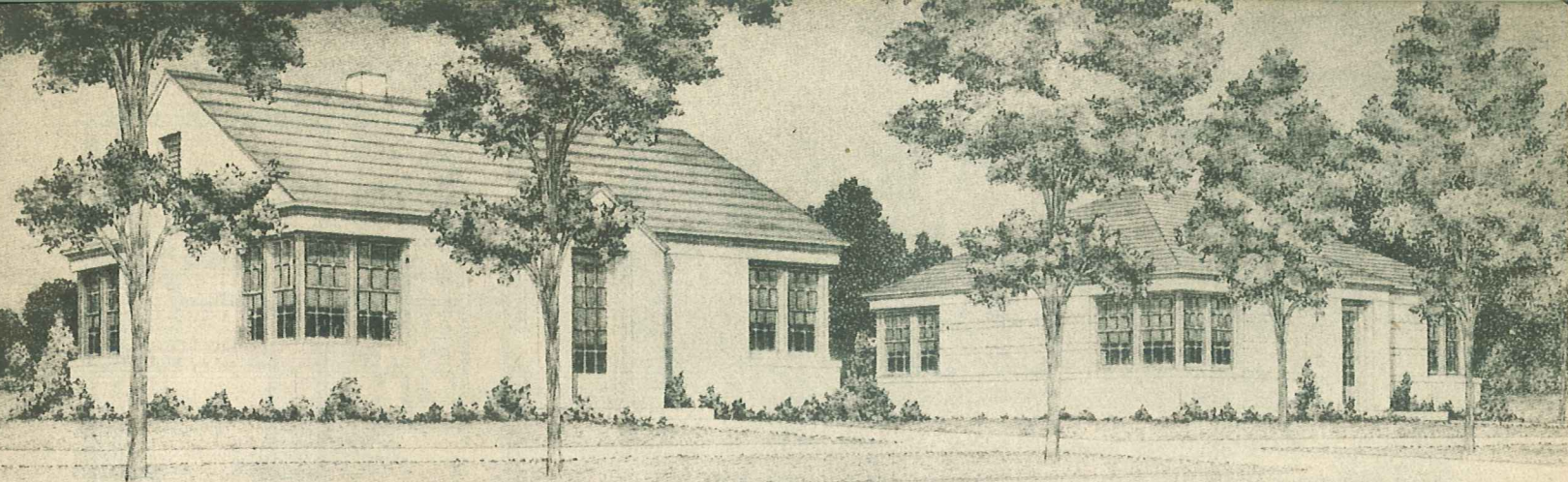


Many interesting exterior elevations may be developed from one basic floor plan chosen for efficient room arrangement and economy in construction. Each home



HOW TO LOWER BUILDING COSTS

- Keep exterior lines of house simple.
- Keep trim and window details plain.
- Concrete floors offer savings in choice of floor finish.
- Build for present income with a plan that will allow additions for future needs.
- Ample living space is more important than special finishes or gadgets.
- Quality construction secures preferential mortgage rating.



may require essentially the same amounts and kinds of building materials and equipment, yet look different through variations in window and entrance details, style

or color of roof or a change in front elevation through facing the floor plan to different exposures. Variety can be secured by simply reversing the floor plan.

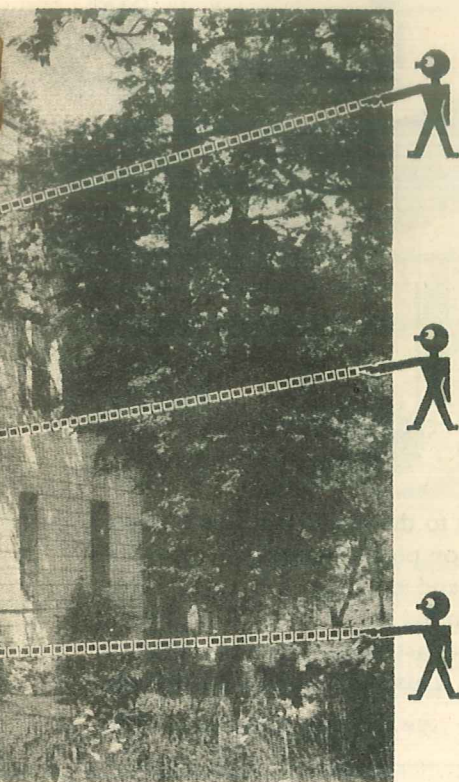
HERE'S WHERE A CONCRETE HOUSE IS SUPERIOR

These are the features that distinguish firesafe construction. They are the quality marks of the best home that money can buy, the guarantee of life-long economy in homekeeping.

FIRESAFE ROOF—that protects against sparks and flames, that resists the wear of sun, rain and snow. Pitched roofs are made firesafe with a covering of cement-asbestos shingles or concrete tile. The underside of rafters is fire-protected with metal lath and portland cement plaster. For flat roofs, any type of standard reinforced concrete construction is firesafe.

CONCRETE FLOORS—the greatest factor in limiting the spread of flames originating within a house. These floors are rigid, sagproof, comfortable, with the strength of floors in modern hotels and large apartments. They are warm and dry. For floor finish, select any floor covering desired—hardwood, carpeting, linoleum, rubber tile, terrazzo or colored concrete marked off in patterns—and place it on firesafe concrete subfloors.

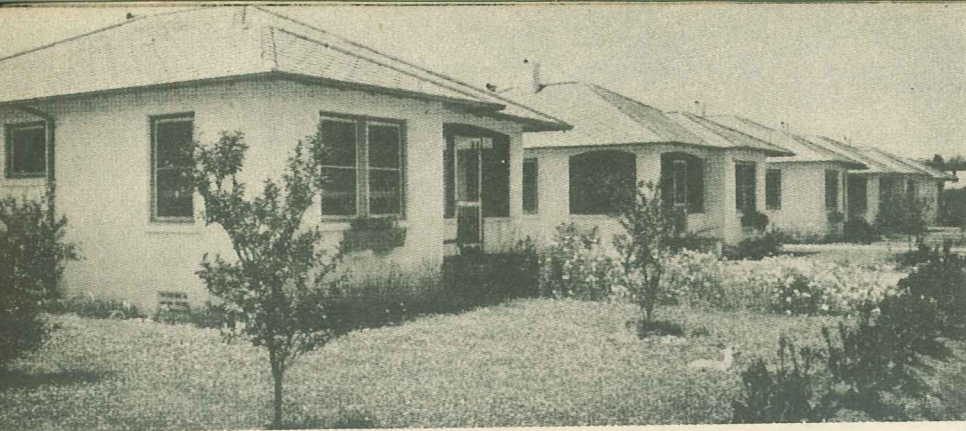
CONCRETE WALLS—durable, attractive walls of concrete masonry or reinforced concrete. For charm and individuality, there are scores of different concrete wall finishes—patterned masonry, textured portland cement stucco, colored cement paint and molded detail. Concrete walls are strong, weather-tight, firesafe—and they can be fashioned to fit any architectural style desired.



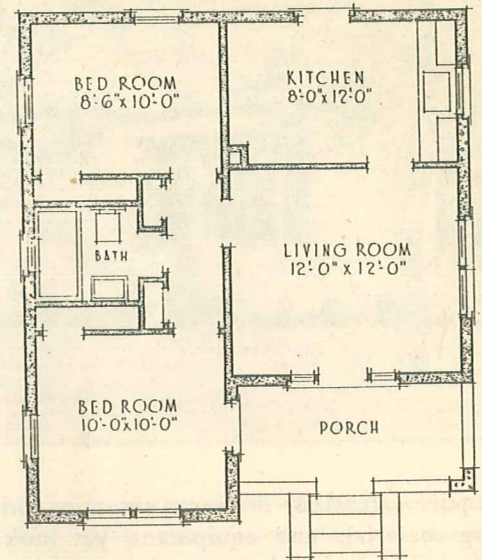
HINTS

HOW TO LOWER LIVING COSTS

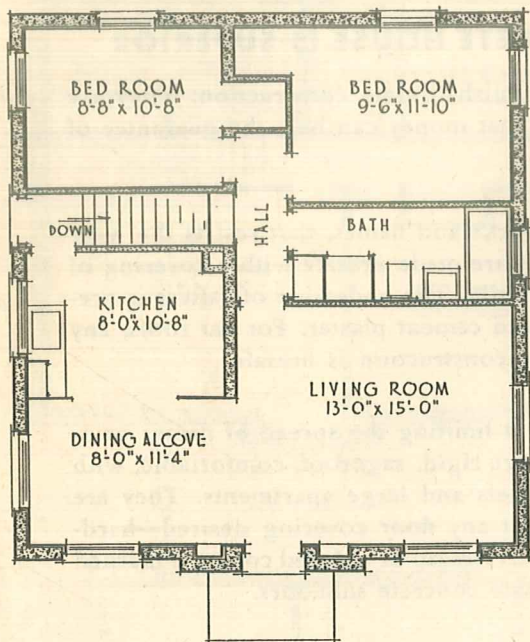
- Safeguard your investment with fire-safe building materials.
- Firesafe construction will lower annual insurance expense.
- Concrete floors that won't sag, warp or shrink avoid costly repair bills.
- Rigid floors and walls help prevent plaster cracking.
- Ease in cleaning and maintenance of concrete surfaces lowers upkeep costs and makes housekeeping a pleasure.
- Concrete construction builds out unforeseen "hidden mortgages" (repair and maintenance bills).



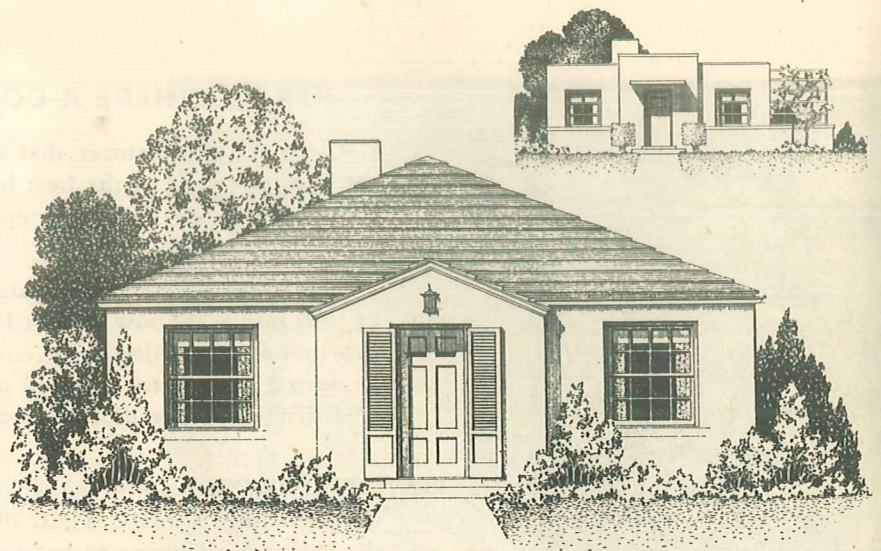
CUBAGE...7,590 cu.ft.



Coolness of a concrete home is much appreciated in the summer. Concrete masonry walls with usual insulation are always warm and dry in the winter. The room arrangement of this floor plan provides for economy in construction. A firesafe roof covering of cement asbestos shingles and portland cement stucco for exterior wall finish add beauty to these small homes.



CUBAGE:
House.....10,080 cu.ft.
Basement... 6,750 cu.ft.



An interesting entrance gives dignity to the simple and direct style of the cottage above. An excellent floor plan features an unusually large living area with cross ventilation and window lighting on three sides, by opening the dining alcove into the living room. Concrete is so easily adapted both in design and construction that any style of house the prospect wants can be built. This same floor plan may be used for a "modern" design as well.

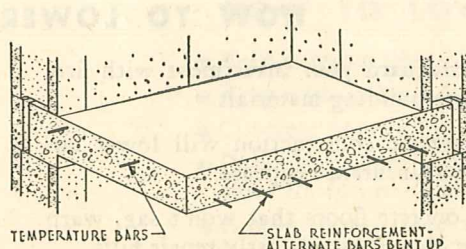
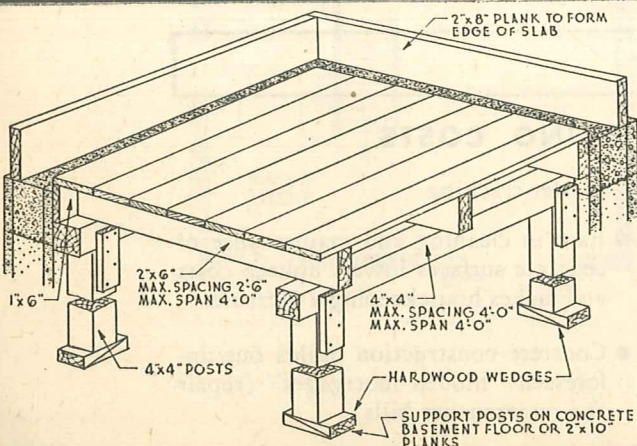
CONSTRUCTION DETAIL AND

CONCRETE FLOOR

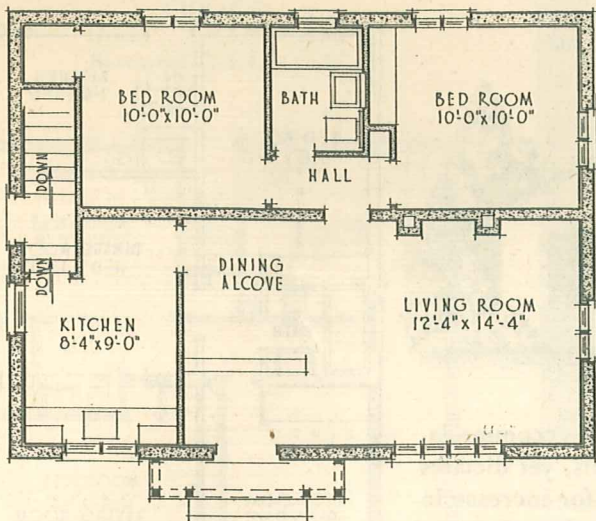
Concrete residence floors offer no construction difficulties to the experienced builder. The essential requirements are an approved design, ordinary skill in form building, and a knowledge of the fundamentals in concreting.

Openings of proper size and proper location should be provided for heating and plumbing connections before

(Left) Typical forming details for solid slab reinforced concrete floor.

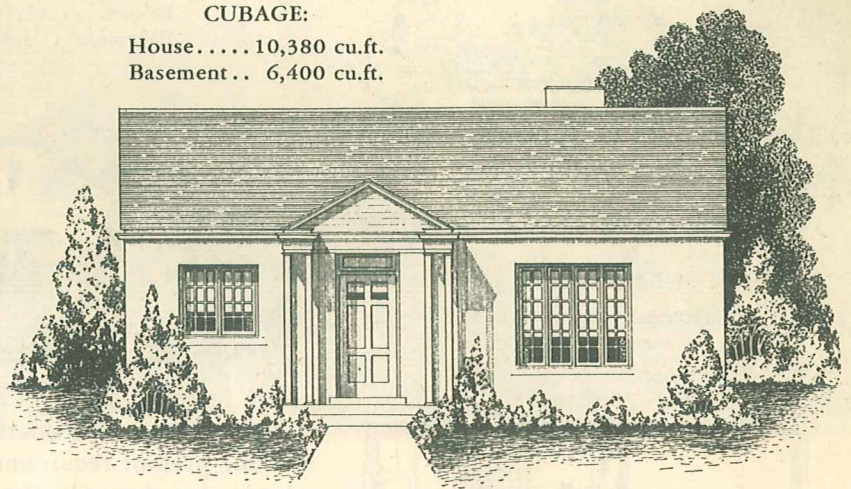


Typical floor section.



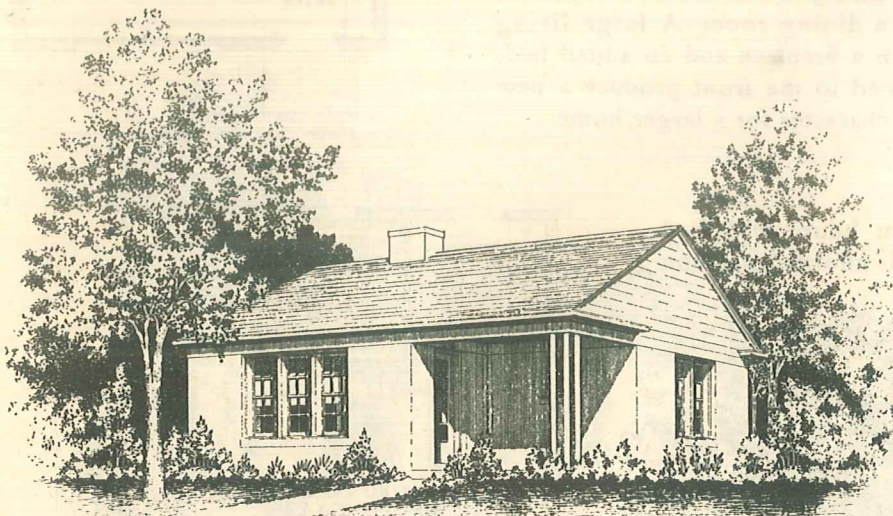
CUBAGE:

House..... 10,380 cu.ft.
Basement... 6,400 cu.ft.



Simple in plan, construction costs of this home may be kept to a minimum without sacrifice of quality. Enclosing the entrance portion within the house offers an

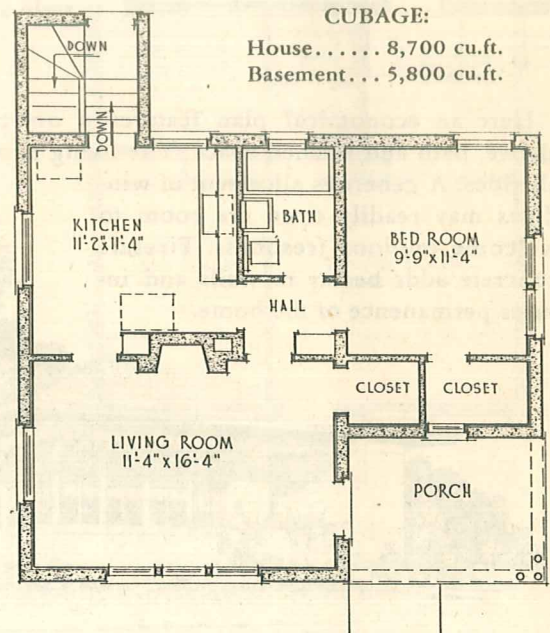
interesting architectural treatment, individual in character. An open fireplace in the living room will appeal to many. To reduce costs this feature may be omitted.



For the snug bungalow above, painted concrete masonry walls are in keeping with the spirit of thrift reflected in Colonial lines. A full basement offers opportunity for a recreation or play room that greatly increases the living space of the home. Construction materials unharmed by termites and resistant to decay are slow to deteriorate, easy to keep up.

CUBAGE:

House..... 8,700 cu.ft.
Basement... 5,800 cu.ft.



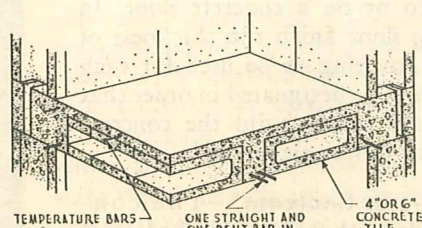
SPECIFICATION SUGGESTIONS

CONSTRUCTION (cont'd.)

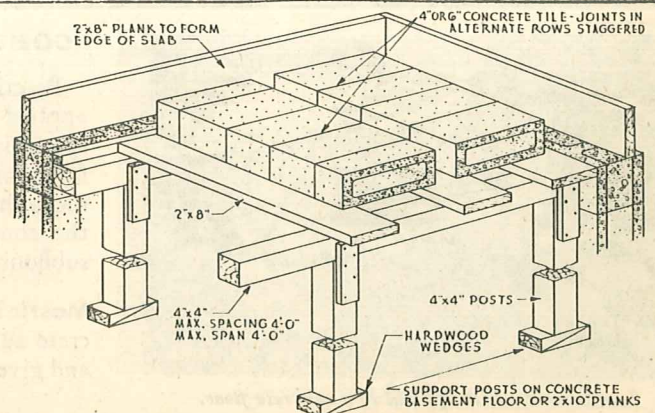
placing concrete. Conduits, outlet boxes and other electrical work to be placed in floor slab should be placed on forms before depositing concrete.

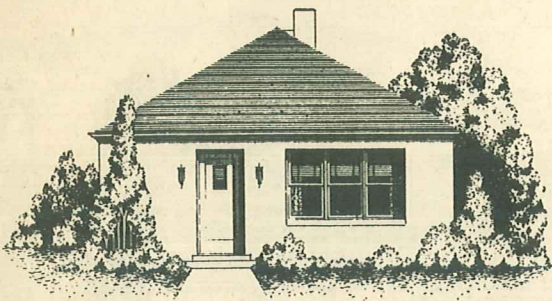
Filler units for tile and joist floors are set on forms in rows as shown and at such spacing of rows as to provide proper width of beam. Units are butted together to form a tight joint preventing leakage.

(Right) Typical forming details for tile-joist concrete floor construction.



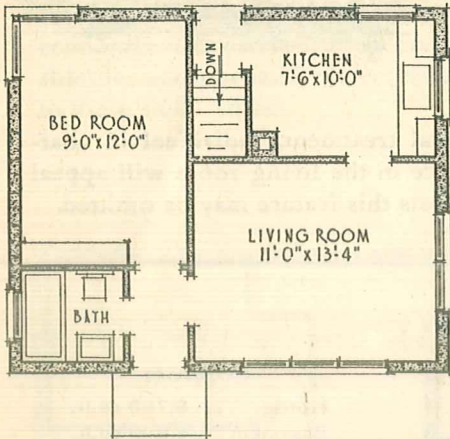
Typical floor section.





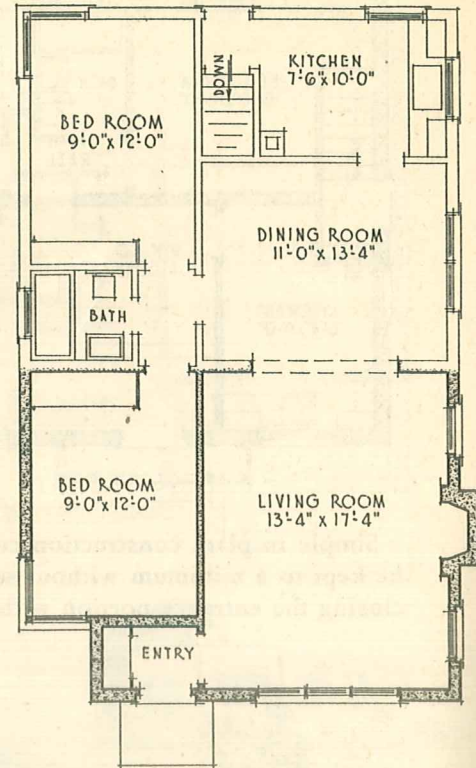
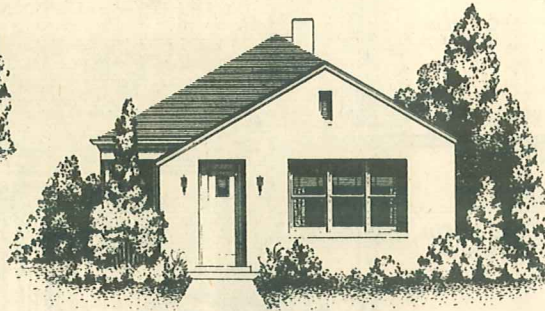
CUBAGE (first stage):

House.....5,760 cu.ft.
Basement... 3,340 cu.ft.



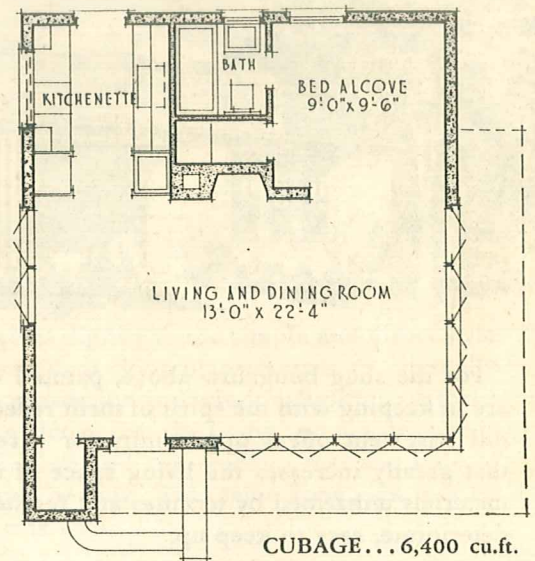
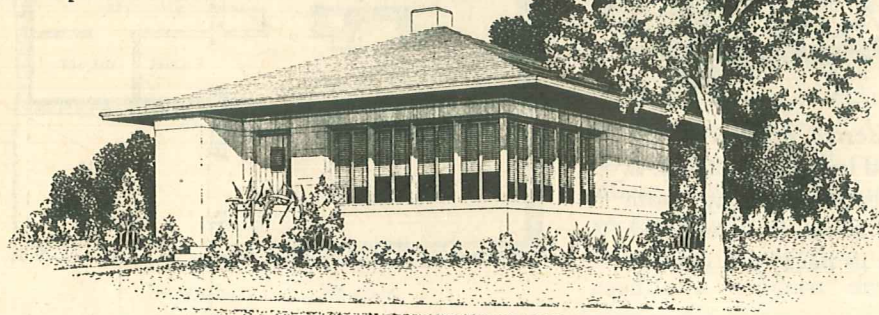
CUBAGE (second stage):

House.....11,190 cu.ft.
Basement... 3,340 cu.ft.



Thrifty suggests moderate accommodation for present requirements, yet dictates a basic plan that will allow for increase in living space of the home as circumstances require or may afford. Set well back on the plot, the house on the left may grow to take on new shape and more floor space, as shown on the right. The former living room becomes a dining room. A large living room with a fireplace and an added bedroom joined to the front produce a new style and character for a larger home.

Here an economical plan features a one-room house with bed alcove, bath and kitchen space. The living room is afforded light on all sides. A generous allotment of windows may readily open the room to welcome outdoor freshness. Firesafe concrete adds beauty to walls and insures permanence of the home.



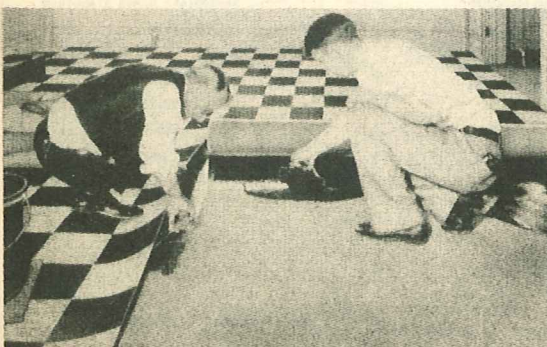
CUBAGE...6,400 cu.ft.

CONSTRUCTION DETAIL AND

CONCRETE FLOOR FINISHES

Practically any type of finish can be applied to or on a concrete floor. In specifying floor finish the thickness of finish or covering to be used for each room should be designated in order that the contractor can build the concrete subfloor to proper elevation.

Mastic tile or linoleum — The concrete subfloor should be finished level and given a smooth troweled finish. The



Linoleum is easily applied to a concrete floor.

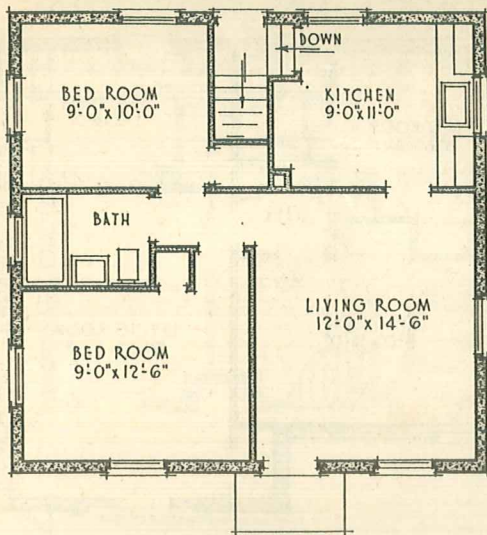


Placing wood finish on a concrete subfloor.

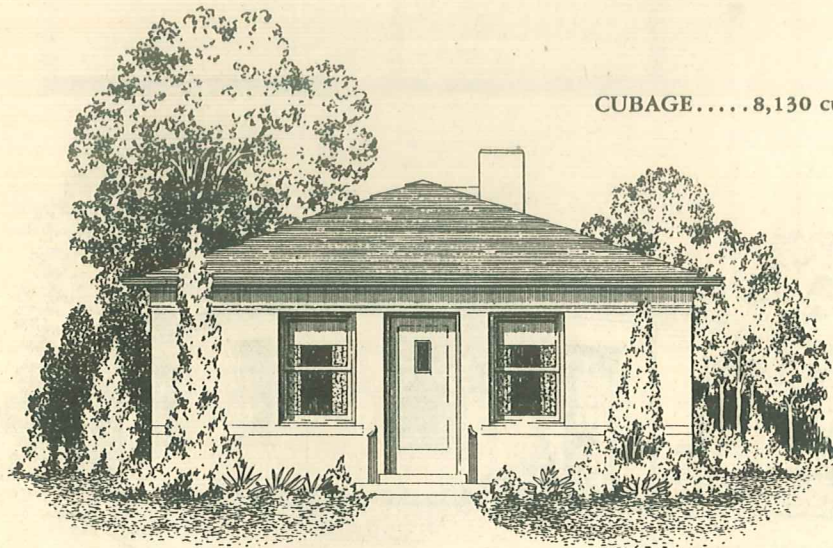
CUBAGE:

House.....8,780 cu.ft.

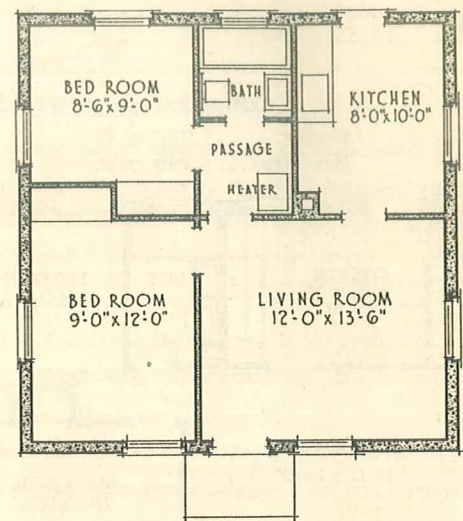
Basement...5,400 cu.ft.



Many house builders would rather work with concrete because they know it gives the greatest satisfaction. A pleased client is the contractor's best salesman. One way to determine the value of a concrete house is to ask the man who lives in one.



CUBAGE.....8,130 cu.ft.



This American cottage is another fine example of the adaptability of concrete to a pleasing exterior. The floor plan is designed for a small lot and a modest

budget, yet the house has an air of distinction imparted by the solid and durable appearance of concrete masonry construction.

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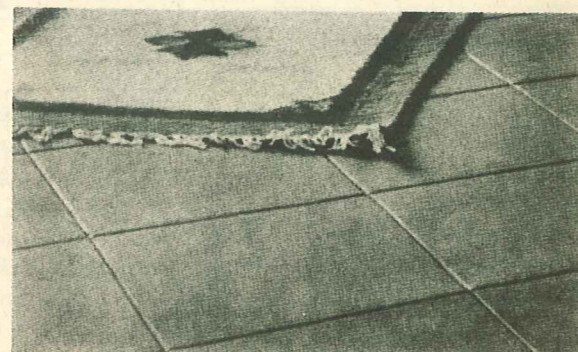
SPECIFICATION SUGGESTIONS

floor surfacing material should be laid on and bonded to floor slab, in accordance with manufacturer's directions.

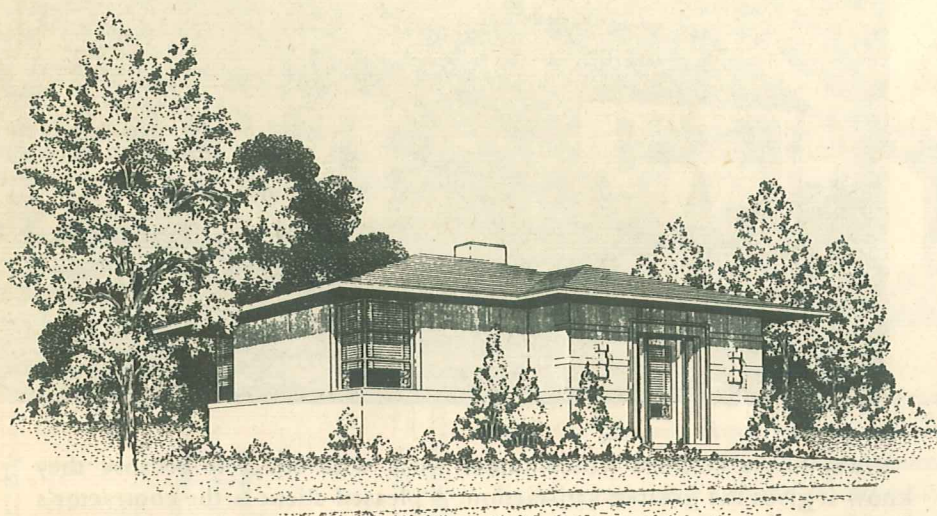
Hardwood flooring—Creosoted 2x3-in. sleepers with beveled edges should be set on 16-in. centers as nailing strips for the flooring. Sleepers should be accurately leveled and may be set in the concrete floor slab or attached to the slab by metal clips.

Colored concrete topping 1 in. thick

—Topping concrete should be a 1:1½:1½ mix. Not more than 5 gal. of water should be used per sack of cement. Mineral oxide pigment should be thoroughly mixed with portland cement to a uniform color before mixing with water and aggregate. The amount of color required should be determined by sample slabs which have been allowed to dry. Ten to 15 lb. of pigment per sack of cement will usually be sufficient.



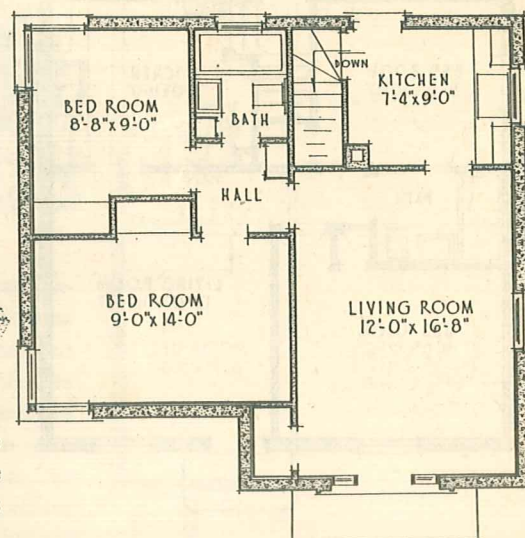
Concrete floor finish marked off.



When a concrete home is carefully designed and constructed it will give long years of service and require very little in return. The economy of concrete lies in its strength and durability, protecting the house against costly repairs and preserving its first beauty.

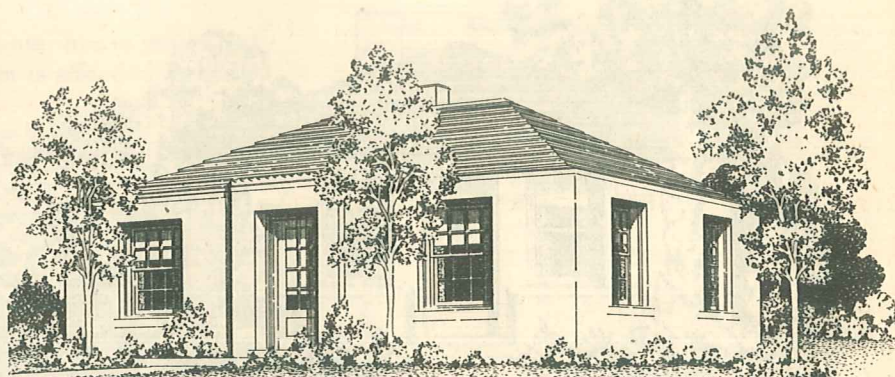
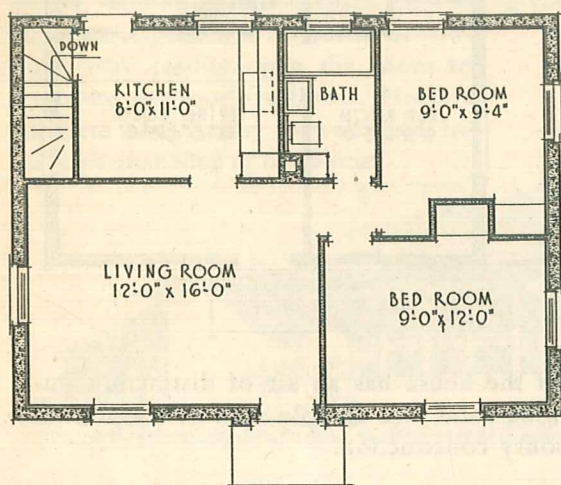
CUBAGE:

House 7,650 cu.ft.
Basement . . . 5,560 cu.ft.



CUBAGE:

House 7,920 cu.ft.
Basement . . . 5,280 cu.ft.



In addition to complete firesafety a concrete home is a blessing to the housewife in making house cleaning easy. There are no gaping baseboards to defy thorough cleaning. Construction is solid, tightly fitted, allowing no sifting of dust and dirt through cracks.

CONSTRUCTION DETAIL AND SPECIFICATION SUGGESTIONS

CONCRETE MASONRY WALLS

It is important in all types of masonry construction to seal the wall against possible entrance of moisture. Pay close attention to filling and tooling the mortar joints; proper application of approved flashing; and to sealing all exposed wall surfaces by proper application of portland cement base paint or a portland cement stucco.

Mortar for laying above-grade concrete masonry walls is mixed in the following

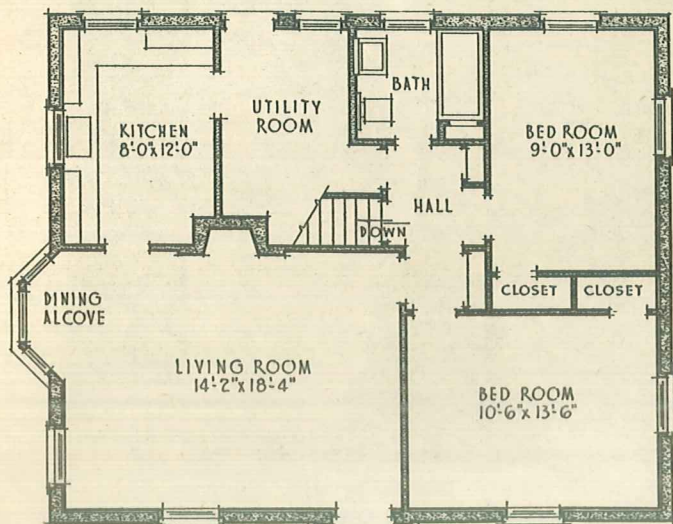
proportion: One volume of portland cement, to 1 volume of lime putty or hydrated lime, to 6 volumes of damp, loose mortar sand; or 1 volume of masonry cement meeting the requirements for Type II of Federal Master Specifications SS-C-181b, to 3 volumes of damp, loose mortar sand.

Where floors have a continuous bearing on walls, the cores in the course of masonry which will carry the floor should be filled with mortar or concrete.



Tooling horizontal joints.

Concrete masonry homes properly built give long years of low-annual-cost service. Regardless of the style or size of home you plan, it will be a better home if built of firesafe concrete masonry.



CUBAGE:

House 11,500 cu.ft.
Basement . . . 7,600 cu.ft.



HOW TO GET A CONCRETE HOME

PEOPLE by the thousands are asking: How can I get a concrete house? Who can design it? Who is a good builder in my locality? What will it cost? Can I get a long-term loan?

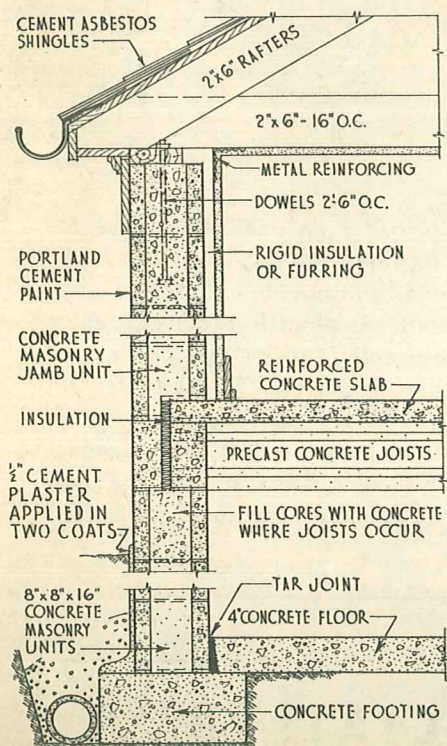
For people who are convinced that they want a concrete home, want it designed and built properly, these problems can be ironed out smoothly.

Take your ideas to an architect and have him prepare working drawings and specifications for the home you want adapted to your specific requirements. If you don't know who the best designers in your locality are, ask your local concrete products manufacturer or concrete contractor to suggest names of reliable architects experienced in concrete house design.

The concrete products manufacturer or concrete contractor can also help to put you in touch with competent builders experienced with concrete construction.

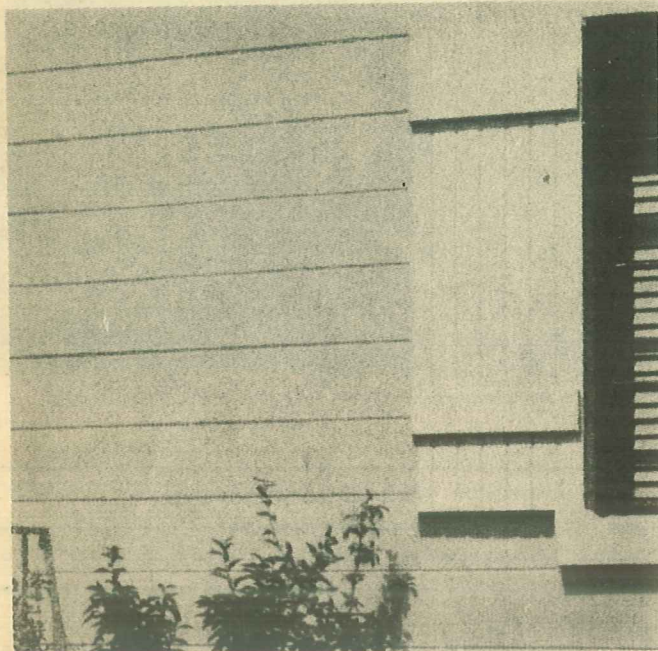
After you have your plans, go over them carefully with your lending agency to be sure that the house is designed to secure the most favorable financing arrangements.

Walls, floors and roof are much less than half the cost of the complete house. By adjusting the type of equipment used you can reduce the total cost of the home to fit your pocketbook without sacrificing all-important firesafety of the structure and the many advantages in economy and livability that go with concrete homes.

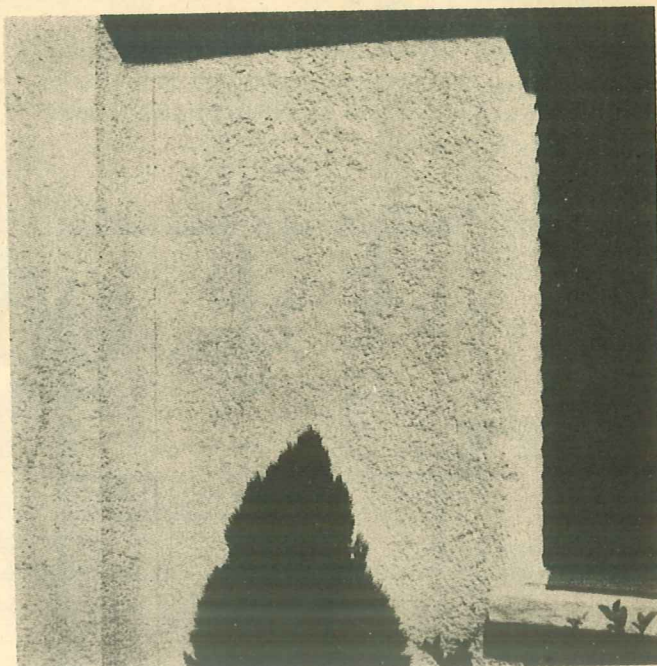


Typical wall, floor and roof construction for a concrete home.

CHARM IN CONCRETE WALLS

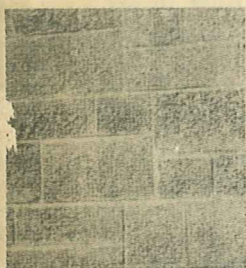


Tooled horizontal masonry joints—vertical joints obscured by striking flush and rubbing.

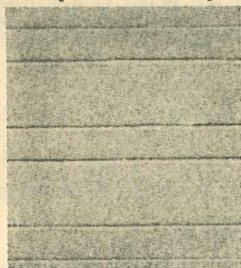


Rough cast portland cement stucco with troweling to bring out the highlights.

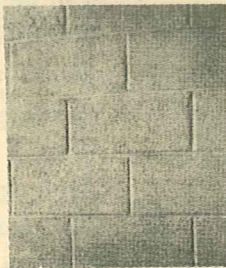
Some of the various patterns in painted masonry



Random Ashlar



Coursed Ashlar



Plain Ashlar

Some of the attractive stucco textures commonly used



English Cottage



Italian



Spatter Dash

Giving charm to a small home depends on how effectively the design is executed in the material of construction. Concrete masonry units of standard or varied sizes may be laid in coursed or random patterns and finished with a colored or white portland cement paint. Painting exterior concrete masonry walls should be considered a waterproofing as well as a decorative job. A suitable portland cement paint serves both purposes. Two coats of portland cement paint properly applied give many years of satisfactory service.

Concrete masonry provides an unexcelled base for portland cement stucco. Important factors in successful stucco work are adequate flashing of openings and intersections of walls and roof, use of well-graded aggregate and application of three full coats of properly mixed mortar with suitable curing periods. Portland cement stucco can be produced in a wide range of textures limited only by the skill and ingenuity of the craftsman. Whatever style of architecture, a texture may be used which will harmonize with and accentuate its beauty.

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CHICAGO 10, ILLINOIS